



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 10/661,535 | 09/15/2003 | Hitoshi Hirakawa | 1996.1040 | 8025 |
| 21171 | 7590 | 10/29/2008 | EXAMINER | |
| STAAS & HALSEY LLP | | | SHERMAN, STEPHEN G | |
| SUITE 700 | | | | |
| 1201 NEW YORK AVENUE, N.W. | | | ART UNIT | PAPER NUMBER |
| WASHINGTON, DC 20005 | | | 2629 | |
| | | | | |
| | | | MAIL DATE | DELIVERY MODE |
| | | | 10/29/2008 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/661,535 | HIRAKAWA ET AL. | |
| | Examiner | Art Unit | |
| | STEPHEN G. SHERMAN | 2629 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 September 2008.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,20 and 23-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,20 and 23-26 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 08 June 2006 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>10/24/2008</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

1. This office action is in response to the amendment filed 10 September 2008. Claims 1, 20 and 23-26 are pending.

Response to Arguments

2. Applicant's arguments filed on 10 September 2008 have been fully considered but they are not persuasive.

On page 6 of the response the applicant argue the 112, first paragraph rejection. Specifically the applicant states that the specification says "only that it is not necessary to cause the all-cell write discharge to occur in SF3 and subsequent subfields at page 17, line 13 and 14, not that all cells to be written are not lit in SF3, SF4, etc, but rather only SF2. It seems that the applicant does not understand their own invention and specification. While it is true the specification states that it is not necessary to cause the all-cell write discharge to occur in SF3 and subsequent subfields, the specification never states the all cells to be written in an address period of a subfield subsequent to the second subfield. In fact the specification makes it clear that this is only done in SF1 in the first embodiment, and only SF2 in the second embodiment being claimed. The specification never states that all cells to be written are written in SF3 or SF4, etc. The applicant further, continues to fail to point out where in the specification there is support for such a limitation. This is probably because it is NOT in the specification and further

not shown in the drawing either. Thus this limitation cannot be claimed as recited in the rejection below. The applicant continues on page 6 to recite about the "all-cell write discharge", which the examiner notes has nothing to do with the 112, first paragraph rejection, and then further describes their 2 embodiments where all cells are lit in only SF1 (Figure 6) or only in SF2 (Figure 8). By pointing this out, the applicant seems to agree with the examiner's rejection that "all cells to be written" is only done in SF2, which is the embodiment the applicant is claiming, and that this is not done "in at least one subfield including and subsequent to the second subfield" because if one were to choose SF3 as the "at least one subfield" then all the cells to be written are NOT lit in SF3.

The examiner notes that based on the applicant's arguments they seem to be confused about how they have chosen to word their claims and the 112 rejection. Because the claim states "in at least one subfield including ands subsequent to the second subfield", the examiner only needs to pick ONE subfield, which would be either SF2, SF3, SF4, etc. The limitation does NOT mean that SF2 has to be included in the choice. Thus if one chose SF3, SF4, SF5, etc as the "at least one subfield", then NONE of these singular subfields satisfy the requirement of the limitation that "all of the cells to be written" being addressed because in the specification it is clear that if only ONE subfield is chosen to do this, then it MUST be SF2 in the embodiment claimed. Thus if the applicant wishes the claim to have another meaning, then they should reword their claims.

The applicant further argues these same basic points again on page 7 of the response, and further tries to explain that the drive waveforms in SF3 and subsequent subfields, which are the same as the drive waveforms in SF2 and subsequent subfields in the first embodiment cover the limitation in dispute, however, as explained above, the applicant is confused as what their invention is versus what their claims say. The claims state "in at least one" meaning that only one subfield has to cover the limitation and unless one were to choose SF2, the other subfield ALONE do not cover the limitation of the claim as explained above.

The applicant further argues on page 8 the 122 second paragraph rejection by repeating the arguments asserted above, and for the same reasons as explained above, the rejection is proper.

On page 9 of the response the applicant argue the 103 rejection using Correa, San and Ishizuka. Specifically the applicant argues that Sano is generating an all-cell write discharge in a priming period of every subfield and combining Sano and Correa would only replace the writing pulse of Correa with the all-cell write discharge of Sano. The examiner respectfully disagrees. In response to applicant's argument that Correa and Sano combined would not result in the invention, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Further the applicant argues that Ishizuki is not "writing in said at least one subfield, after said addressing, an inclined waveform suppressing an accumulation of a wall charge in unselected cells" and thus cannot make up for the deficiencies of Correa and Sano. The applicant states that Ishizuki is applying an erasing pulse to the scanning side and not "suppressing an accumulation of a wall charge in unselected cells" and then points to paragraph [0058] and states that Ishizuki does not teach the claimed limitations. The applicant also points to paragraph [0060] and states Ishizuki applies a scanning pre-erasing pulse of a gradually reducing negative polarity to the scanning electrode, not to "unselected cells." The examiner respectfully disagrees. If Ishizuki is applying a negative sloping pulse, as the applicant is, at the same time period the applicant is, then the same effect will be attained. If the applicant is trying to state that applying a negative sloping pulse between the address period and the sustain period to the scan electrode, which is the SAME as the applicant, does not suppress an accumulation of a wall charge in unselected cells, the applicant is admitting that their own invention does not perform the limitations of their claims. Further, applying this to the scanning electrode will apply this to all cells, including those that are unselected. As such, if in the applicant's invention applying a negative sloping pulse to the scan electrode between the address period and the sustain period suppresses an accumulation of a wall charge in unselected cells, then the pulse in Ishizuki will also perform this function.

On pages 10-11 of the response the applicant argues that Correa teaches away because Correa teaches that the problem of background luminance won't occur and thus the problem proposed by "an accumulation of a wall charge in unselected cells"

does not occur in Correa, and thus Correa teaches away. The examiner respectfully disagrees. Just because Correa teaches of background luminance not occurring does not mean that Correa teaches away from the problem proposed by an accumulation of wall charges in unselected cells, because in the rejection, Ishizuki was used with the combination of Correa and Sano, where Sano was used to teach the all-cell write and thus the combination of Correa and Sano would need the problem to be solved. Also, Correa does not teach away because Correa teaches of using an all-cell write discharge as explained in the rejection, and thus cannot teach away.

The applicant further argues the remain claims 20, 24, 25 and 26 similarly as the arguments presented for claim 1 and further merely recites what their invention is and that the cited references do not teach the invention, however, as explained above, the references teach the claimed limitations.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 20, 23 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1 and 20 each state the limitation "addressing, in at least one subfield including and subsequent to the second subfield". There is insufficient description in the specification to support this claim. The part of the specification discussing the embodiment claimed begins on page 16, line 15 and continues to page 17, line 21, where page 17, lines 11-12 explicitly state that all of the cells to be lit in a display field have been lit in SF2. Thus all of the cells to be written are not written in at least one subfield subsequent to the second subfield. Therefore, this limitation cannot be included in the claims because there is not enough description in the specification to support this feature so as to convey to "one of ordinary skill" in the art at the time the invention was made that the inventor has possession of the claimed invention.

For the purposes of examination, the examiner will ignore the "subsequent" limitation that is not supported by the specification, and read the limitation as "addressing, in at least one subfield including the second subfield".

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 recites the limitation “applying a scan pulse to the second electrodes and an address pulse to the third electrodes in order to write all of the cells to be lit in any of the subfields subsequent to the first subfield in the display field in the address period”. The limitation is indefinite because it is unclear as to whether the applicant intends to claim that the scan pulse is applied in any of the subfields subsequent to the first subfield, thus making a 112, 1st paragraph issue similar to claims 1 and 20, or whether the applicant has intended to claim that the scan pulse is applied so that all cells that will be written in any of the subfields will be written all at once in one subfield.

For the purposes of examination the examiner will assume the latter, as read the limitation as all of the cells to be written at any time during the field will be written in a first/second subfield as supported by the specification.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1, 20, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Correa et al. (EP 1,174,850 A1) in view of Sano et al. (US 6,115,011) and further in view of Ishizuka (US 2002/0050794).

Regarding claim 1, Correa et al. disclose a method for driving a plasma display panel, wherein a display field comprises a plurality of successive subfields having at least two different luminance weights, producing a gradation display, each display subfield comprises at least an address period to write cells to be lit in the display subfield in accordance with corresponding display data and a sustain period to cause light emission to occur in the written cells (Paragraph [0021]), said method comprising: writing an all-write discharge in a first subfield having a lightest luminance weight (Paragraph [0012] and Paragraph [0022] explain that a priming pulse causes a discharge where all-cells are illuminated. Figures 1-3 show that priming pulses are applied at the beginning of the first subfield.), addressing, in at least one subfield including and subsequent to the second subfield, and substantially near a head of the display field, all of the cells to be written in the respective address periods of the plurality of successive display subfields in the display field (Paragraphs [0025]-[0029] explain that the first subfield is used to write all of the cells that are not to be black, i.e. all cells to be written in the display field. The

chart at the top of column 6 illustrates this point, since there is a 0 in the first subfield for display data “0” and a 1 in the first subfield for all other display data levels. Paragraph [0046] explains that Figure 2 shows an example where the first two subfields are SPSF, where paragraph [0025] explains that a SPSF is one in which all cells, that should not be black, are excited. Thus the first and second subfield is a SPSF and all of the cells to be written are written in any subfield including the second subfield.); and

applying sustain pulses to cause light emission in the respective sustain periods of the successive display subfields of the display field (Paragraph [0021] explains that subfields contain a sustain period to cause light emission.).

Correa et al. fail to teach of writing an all-cell write discharge in a second subfield having a second lightest luminance weight.

Sano et al. disclose a method for driving a plasma display panel, comprising generating an all-cell write discharge in a priming period of every subfield (Figure 4 shows that there is a priming period in every single subfield.).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to provide for priming period in every subfield as taught by Sano et al. in the method taught by Correa et al. such that the first and second subfields of the lightest weights would contain priming periods in order to use the priming discharging in an advantageous way so as to initialize all of the cells before writing.

Correa et al. and Sano et al. fail to teach writing in said at least one subfield, after said addressing, an inclined waveform suppress an accumulation of a wall charge in unselected cells.

Ishizuka discloses a method for driving a plasma display panel comprising writing in one subfield, after addressing, an inclined waveform suppress an accumulation of a wall charge in unselected cells (Figure 12 shows that Period 6 is after addressing and contains an inclined waveform applied to the scanning electrode. See paragraphs [0058]-[0060]).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to provide for the inclined waveform period taught by Ishizuka to be placed between the scanning and sustaining periods taught by the combination of Correa et al. and Sano et al. in order to suppress an accumulation of a wall charge in unselected cells.

Regarding claim 20, please refer to the rejection of claim 1, and furthermore Correa et al. also disclose a plasma display device comprising a plasma display panel and a driving circuit for the plasma display panel (Figure 4).

Regarding claims 23 and 24, Correa et al., Sano et al. and Ishizuka disclose the method for driving a plasma display panel as set forth in claim 1 and the plasma display panel as set forth in claim 20.

Correa et al. also disclose wherein a third subfield subsequent to the second subfield and a subfield after the third subfield each have a charge control period due to a charge control pulse different from the all-cell write discharge (Figure 2 shows that the

third subfield is a RSF, where paragraph [0033] explain that writing pulses, i.e. charge control pulses, are used to control the charge in the cell, i.e. neutral or excited states.).

10. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Correa et al. (EP 1,174,850 A1) in view of Sano et al. (US 6,115,011) and further in view of Ishizuka (US 2002/0050794) and Yoon et al. (US 7,286,102).

Regarding claim 25, please refer to the rejection of claim 1, and furthermore Ishizuka et al. also disclose a plurality of first and second electrodes (Figure 1, 104 and 103) and a plurality of third electrode (Figure 1, 107) disposed to cross the first and second electrode (Figure 1), wherein the method comprises:

applying, to the second electrodes, in an initial first subfield in the display field having a lightest illuminance weight and a reset period, a first-waveform voltage in which the applied voltage increases as time elapses (Figure 12 shows that Ppr-s increases with time during a reset period and is applied to the scanning electrode.);

applying, to the second electrodes, a second-waveform voltage in which the applied voltage decreases as time lapses (Figure 12 shows that Ppe is applied to the scanning electrode which decreases with time.);

applying a scan pulse to the second electrodes and an address pulse to the third electrodes (Figure 12 shows that scanning pulses Pw are applied to the scanning electrodes while Pdata is applied to the data, i.e. third, electrodes.);

applying, to the second electrodes, a third-waveform voltage in which the applied voltage decreases as time lapses (Figure 12 shows that a decreasing waveform is applied to the scanning electrode.); and

applying a sustain pulse to at least ones of the first and second electrodes so that a voltage different, between the first and second electrodes alternately becomes a predetermined value in the sustain period (Figure 12 shows Psus-s and Psus-c applied to the scanning and sustaining electrodes.).

Correa et al., Sano et al. and Ishizuka fail to teach of applying a positive pulse to the third electrodes between the address period and the sustain period.

Yoon et al. disclose a method for driving a plasma display comprising applying a positive pulse to the third electrodes between the address period and the sustain period (Figure 18).

Therefore, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to provide for the positive voltage taught by Yoon et al. to be done during the declined waveform period as taught by the combination of Correa et al., Sano et al. and Ishizuka in order to further suppress an accumulation of a wall charge in unselected cells.

Regarding claim 26, this claim is rejected under the same rationale as claim 25.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN G. SHERMAN whose telephone number is (571)272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Stephen G Sherman/
Examiner, Art Unit 2629

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629

20 October 2008